

Seat No. : _____

SM-111

September-2020

B.Sc., Sem.-VI

**311 : Biochemistry
(Applied Biotechnology)**

Time : 2 Hours]

[Max. Marks : 50

- Instructions :**
- (1) All Questions in **Section-I** carry equal marks.
 - (2) Attempt any **THREE** questions in **Section-I**.
 - (3) Question No. **9** in **Section-II** is **COMPULSORY**.

SECTION – I

1. What are immobilized enzymes ? List different methods of enzyme immobilization and discuss any two methods. **14**

2. (a) Discuss advantages & disadvantages of immobilized enzymes. **7**
(b) List different types of Enzyme Reactor. Write a note on Membrane Enzyme Reactor. **7**

3. Write a short note on GM foods. **14**

4. (a) Discuss briefly the advantages of Probiotics. **7**
(b) Discuss briefly use of any six enzymes in food industry. **7**

5. Discuss different types of recombinant vaccines in detail. **14**
6. (a) Write a note on : Gene therapy **7**
(b) Write a note on : DNA Fingerprinting **7**
7. Discuss biodegradation of Aliphatic hydrocarbon compounds. **14**
8. (a) Explain : Phytoremediation **7**
(b) What are Xenobiotics ? Discuss their degradation. **7**

SECTION – II

9. Attempt any **eight** : **8**
- (1) Give one example of use of immobilized enzyme.
 - (2) Draw a labelled schematic diagram of biosensor.
 - (3) Write one objective of enzyme engineering.
 - (4) Name any two types of biosensors.
 - (5) Define Probiotics.
 - (6) Name any one organism used to produce Single Cell Proteins.
 - (7) State any one advantage of Single Cell Proteins.
 - (8) Name any one Genetically modified food.
 - (9) What is Tissue Engineering ?
 - (10) Name any two vectors used in Gene Therapy.
 - (11) Name any two DNA markers used in disease diagnosis.

- (12) Give any two examples of biological materials used in tissue engineering.
- (13) Define : Bioremediation
- (14) List two advantages of Biofertilizers.
- (15) Give two examples of Phosphate solubilising bacteria
- (16) Give two examples of recalcitrant compound.
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SM-111
September-2020
B.Sc., Sem.-VI
311 : Biochemistry
(Endocrinology)

Time : 2 Hours]

[Max. Marks : 50

- Instructions :** (1) **All** Questions in **Section-I** carry equal marks.
(2) Attempt any **THREE** questions in **Section-I**.
(3) Question No. **9** in **Section-II** is **COMPULSORY**.

SECTION – I

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|----|---|---|
| 1. | (A) Write a brief note on characteristic of hormone. | 7 |
| | (B) Describe role of hormones a secondary messenger. | 7 |
| 2. | (A) Explain types of gland hormones of each gland. | 7 |
| | (B) Describe any one model of hormone actions | 7 |
| 3. | (A) Explain chemistry and biosynthesis of Thyroid hormone. | 7 |
| | (B) Describe any one diseases associated with Thyroid hormone. | 7 |
| 4. | (A) Explain Calcium homeostatis. | 7 |
| | (B) Write a brief note on diseases associated with parathyroid hormone. | 7 |

5. (A) Write brief note on chemistry of Pancreatic hormone. 7
(B) Explain biosynthesis of pancreatic hormone. 7
6. (A) Write a role of insulin and glucagon. 7
(B) Describe the diseases associated with pancreatic hormone. 7
7. (A) Explain the anatomy and hormone produced kidney associated endocrine gland. 7
(B) Write a short note biosynthesis of adrenal cortex and medulla. 7
8. (A) Describe on Gonadotropins hormone. 7
(B) Write a brief note on ACTH hormone and its effect. 7

SECTION – II

9. MCQs. Write answer of any 8 : 8
- (1) Which of the following is NOT a major endocrine organ, but produces hormones in addition to its major function ?
- (a) Pancreas (b) Kidney
(c) Thymus (d) Pituitary gland
- (2) Which of the following is protein hormone ?
- (a) Oxytocin (b) Insulin
(c) TSH (d) Antidiuretic hormone

- (3) _____ is not a hormone.
- (a) Estrogen (b) Progesterone
(c) Insulin (d) Lecithin
- (4) _____ is the study of the endocrine system in the human body.
- (a) Ornithology (b) Entomology
(c) Endocrinology (d) Otology
- (5) Low level of adrenal cortex hormones result in _____.
- (a) Goitre (b) Diabetes
(c) Addison disease (d) Cushing syndrome
- (6) Which of the following elements is required for the synthesis of thyroid hormone ?
- (a) Iodine (b) Sulfur
(c) Iron (d) Zinc
- (7) Which is a more sensitive measure of thyroid function ?
- (a) Free T4 (b) Thyroid stimulating hormone (TSH)
(c) Free T3 (d) None of these
- (8) One of the symptoms of hypothyroidism is
- (a) Fatigue (b) Intolerance to cold
(c) Weight gain (d) All of above
- (9) Where is the thyroid gland situated ?
- (a) In the neck (b) In the brain
(c) In heart (d) In pelvic cavity

- (10) Which part of pancreas produce and secrete insulin ?
- (a) Glomerulus (b) Bowman's capsule
(c) Islets of Langerhans (d) Loop of Henle
- (11) _____ hormone is NOT synthesized by Gonads.
- (a) Estrogen (b) Progesterone
(c) Glucagon (d) Androgen
- (12) Glucagon is made of _____ polypeptide chain of amino acid.
- (a) 1 (b) 2
(c) 3 (d) 4
- (13) The main hormone secreted by adrenal medulla is _____.
- (a) FSH (b) Insulin
(c) T3 (d) Epinephrine
- (14) Adrenaline and non-adrenaline are hormones and act as _____.
- (a) Neurotransmitters (b) Energy storing substance
(c) Food storage material (d) Energy producing agents
- (15) Which of the following hormone is known as flight and fight hormone ?
- (a) Thyroxin (b) Adrenaline
(c) ADH (d) Oxytocin
- (16) The adrenal gland is located _____.
- (a) In the peritoneal cavity (b) On the kidneys
(c) Lateral to the live (d) In the abdominal cavity
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